Form 3160-3
(March 2012)

HOBBS OCD
APR 03 2018
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☑ DRILL ☐ REENTER	5. Lease Serial No. NMNM120907
	6. If Indian, Allotee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. (314193) EIDER FEDERAL 102H
2. Name of Operator COG PRODUCTION LLC (217955)	9. API Well No. 30-025-44630
3a. Address 2208 West Main Street Artesia NM 88210	3b. Phone No. (include area code) (575)748-6940
	10. Field and Pool, or Exploratory (97184) WILDCAT / BONE SPRING
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface SWSW / 240 FSL / 1080 FWL / LAT 32.167475 / LONG -103.650496 At proposed prod. zone NWSW / 2410 FSL / 990 FWL / LAT 32.187976 / LONG -103.650784	11. Sec., T. R. M. or Blk. and Survey or Area SEC 35 / T24S / R32E / NMP
14. Distance in miles and direction from nearest town or post office* 22 miles	12. County or Parish LEA / 13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 240 feet	16. No. of acres in lease 1840 / 17. Spacing Unit dedicated to this well 240
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 594 feet	19. Proposed Depth 9228 feet / 16480 feet / 20. BLM/BIA Bond No. on file FED: NMB000860
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3522 feet	22. Approximate date work will start* 02/01/2017 / 23. Estimated duration 30 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature (Electronic Submission)	Name (Printed/Typed) Mayte Reyes / Ph: (575)748-6945	Date 10/17/2017
Title Regulatory Analyst		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 03/22/2018
Title Supervisor Multiple Resources	Office CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

GCP Rec 04/03/18
TOP 1BSS 9863 TVD
WELL TO 9228 TVD

APPROVED WITH CONDITIONS
Approval Date: 03/22/2018

KZ 04/04/18

* Drill & Set

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

APD ID: 10400023408
Submission Date: 10/17/2017
Operator Name: COG PRODUCTION LLC
Well Name: EIDER FEDERAL
Well Number: 102H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - General

APD ID: 10400023408
Tie to previous NOS?
Submission Date: 10/17/2017
BLM Office: CARLSBAD
User: Mayte Reyes
Title: Regulatory Analyst
Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED
Lease number: NMNM120907
Lease Acres: 1840
Surface access agreement in place?
Allotted?
Reservation:
Agreement in place? NO
Federal or Indian agreement:
Agreement number:
Agreement name:
Keep application confidential? YES
Permitting Agent? NO
APD Operator: COG PRODUCTION LLC
Operator letter of designation:

Operator Info

Operator Organization Name: COG PRODUCTION LLC
Operator Address: 2208 West Main Street
Zip: 88210
Operator PO Box:
Operator City: Artesia
State: NM
Operator Phone: (575)748-6940
Operator Internet Address: mreyes1@concho.com

Section 2 - Well Information

Well in Master Development Plan? NO
Mater Development Plan name:
Well in Master SUPO? NO
Master SUPO name:
Well in Master Drilling Plan? NO
Master Drilling Plan name:
Well Name: EIDER FEDERAL
Well Number: 102H
Well API Number:
Field/Pool or Exploratory? Field and Pool
Field Name: WILDCAT
Pool Name: BONE SPRING
Is the proposed well in an area containing other mineral resources? USEABLE WATER

State of New Mexico
ls & Natural Resources Department

NSERVATION DIVISION

0 SOUTH ST. FRANCIS DR.
ta Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

TION AND ACREAGE DEDICATION PLAT

API	Code	Pool Name
5-		pring

Property Name	Well Number
EIDER FEDERAL	102H

Operator No.	Operator Name	Elevation
175 35	COG PRODUCTION, LLC	3522.3'

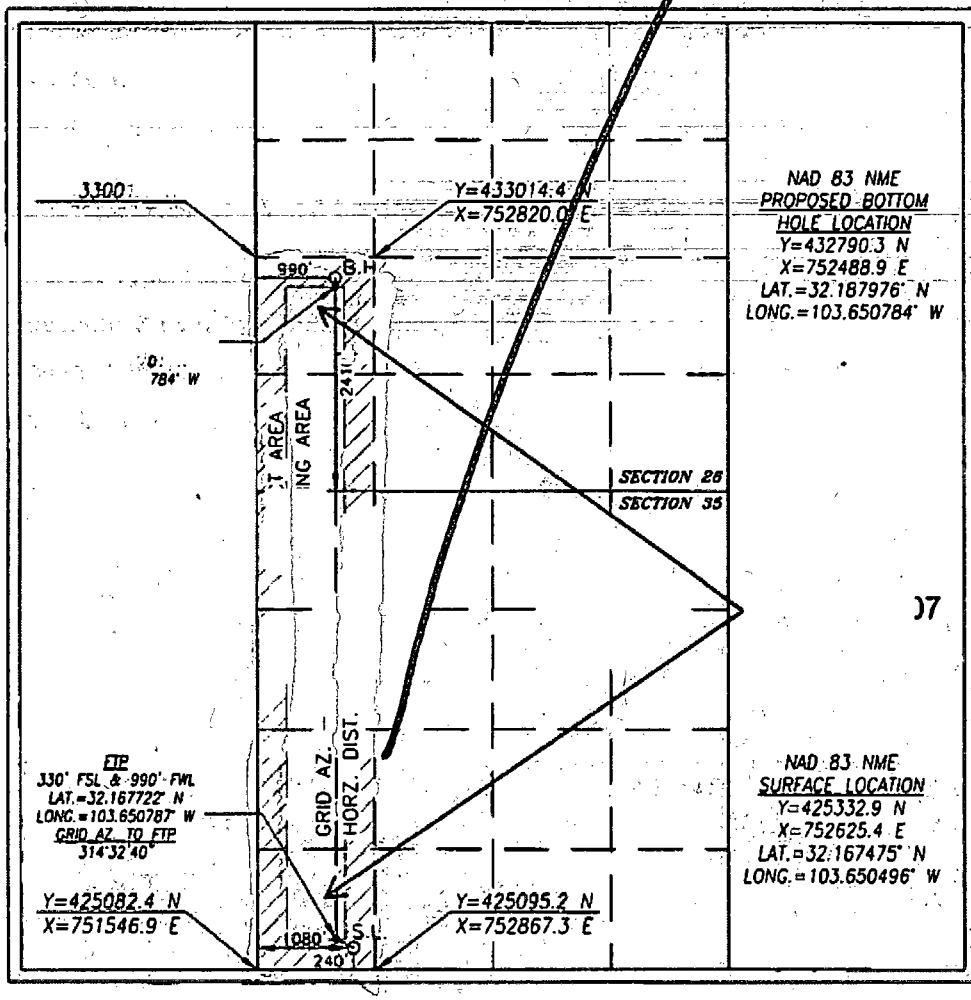
Surface Location

ot No	ip	dn	Feet from the	North/South line	Feet from the	East/West line	County
A			240	SOUTH	1080	WEST	LEA

Location If Different From Surface

lo			dn	Feet from the	North/South line	Feet from the	East/West line	County
	4			2410	SOUTH	990	WEST	LEA
es			Order No.					
40								

ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date 10/5/17

Printed Name

@ ncho.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

AUGUST 25, 2017
Date of Survey

Signature & Seal of Professional Surveyor

CHAD L. HARCROW
NEW MEXICO
17777
LICENSED PROFESSIONAL SURVEYOR

9/11/17

Certificate No. CHAD HARCROW 17777

W.O. # 17-1014 DRAWN BY: JH

APD ID: 10400023408
Submission Date: 10/17/2017
Operator Name: COG PRODUCTION LLC
Well Name: EIDER FEDERAL
Well Number: 102H
Well Type: OIL WELL
Well Work Type: Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	QUATERNARY	3522	0	0		NONE	No
2	RUSTLER	2591	931	931		NONE	No
3	TOP SALT	2258	1264	1264		NONE	No
4	BASE OF SALT	-1076	4598	4598		NONE	No
5	LAMAR	-1304	4826	4826		NONE	No
6	BELL CANYON	-1330	4852	4852		NONE	No
7	CHERRY CANYON	-2239	5761	5761		NATURAL GAS,OIL	No
8	BRUSHY CANYON	-3619	7141	7141	SCHIST	NATURAL GAS,OIL	No
9	BONE SPRING LIME	-5261	8783	8783		NATURAL GAS,OIL	No
10	UPPER AVALON SHALE	-5606	9128	9128		NATURAL GAS,OIL	Yes
11	---	-5786	9308	9308		NATURAL GAS,OIL	No
12	---	-5979	9501	9501		NATURAL GAS,OIL	No
13	BONE SPRING 1ST	-6341	9863	9863		NATURAL GAS,OIL	No

Section 2 - Blowout Prevention

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Pressure Rating (PSI): 2M **Rating Depth:** 4625

Equipment: Annular. The BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Choke Diagram Attachment:

COG_Eider_102H_2M_Choke_20171016141547.pdf

BOP Diagram Attachment:

COG_Eider_102H_2M_BOP_20171016141554.pdf

COG_Eider_102H_Flex_Hose_20171016141601.pdf

Pressure Rating (PSI): 3M **Rating Depth:** 9228

Equipment: Annular, Blind Ram, Pipe Ram. The BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold.

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold.

Testing Procedure: BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Choke Diagram Attachment:

COG_Eider_102H_3M_Choke_20171016141508.pdf

BOP Diagram Attachment:

COG_Eider_102H_3M_BOP_20171016141515.pdf

COG_Eider_102H_Flex_Hose_20171016141522.pdf

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	960	0	960			960	J-55	54.5	STC	2.57	1.35	DRY	9.82	DRY	9.82
2	INTERMEDIATE	12.25	9.625	NEW	API	Y	0	4625	0	4625			4625	L-80	40	LTC	1.27	1.62	DRY	5.73	DRY	5.73
3	PRODUCTION	8.75	5.5	NEW	API	N	0	16480	0	16480			16480	P-110	17	LTC	1.68	3.01	DRY	2.84	DRY	2.84

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Eider_102H_Casing_Prog_20171016141656.pdf

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Casing Attachments

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

COG_Eider_102H_Casing_Prog_20171016141742.pdf

Casing Design Assumptions and Worksheet(s):

COG_Eider_102H_Casing_Prog_20171016141806.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

COG_Eider_102H_Casing_Prog_20171016141854.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	960	390	1.75	13.5	682	50	Class C	4% Gel + 1% CaCl2
SURFACE	Tail			960	250	1.34	14.8	335	50	Class C	2% CaCl2
INTERMEDIATE	Lead		960	4625	870	2	12.7	1740	50	Lead: 35:65:6 C Blend	As needed.
INTERMEDIATE	Tail			4625	250	1.34	14.8	335	50	Tail: Class C	2% CaC12
PRODUCTION	Lead		4625	16480	640	2.5	11.9	1600	25	Lead: 50:50:10 H Blend	As needed.

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

String Type	Lead/Tail	Stage Tool	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Tail			16480	1970	1.24	14.4	2442	25	Tail: 50:50:2 Class H Blend	As needed.

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirement will be kept on location at all times.

Describe the mud monitoring system utilized: PVT/Pason/Visual Monitoring.

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
960	4625	OTHER : Saturated Brine	10	10.1							Saturated Brine
4625	16480	OTHER : Cut Brine	8.6	9.3							Cut Brine
0	960	OTHER : FW Gel	8.6	8.8							FW Gel

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

None planned.

List of open and cased hole logs run in the well:

OTH

Other log type(s):

CNL/GR

Coring operation description for the well:

None planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4465 **Anticipated Surface Pressure:** 2434.84

Anticipated Bottom Hole Temperature(F): 150

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

COG_Eider_102H_H2S_Plan_20171016142318.pdf
COG_Eider_102H_H2S_Schematic_20171016142339.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

COG_Eider_102H_AC_Report_20171016142353.pdf
COG_Eider_102H_Direct_Plan_20171016142401.pdf

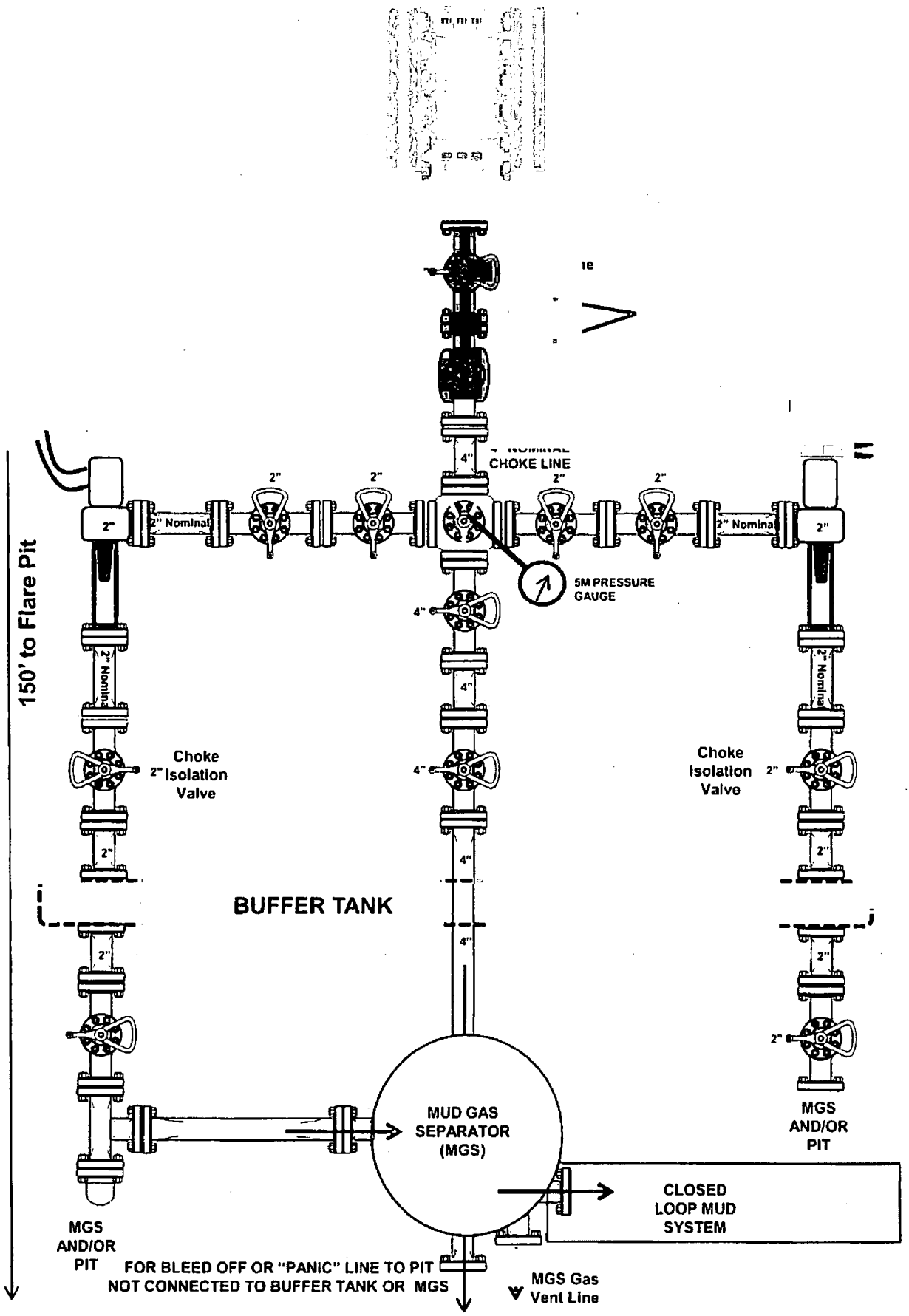
Other proposed operations facets description:

Other proposed operations facets attachment:

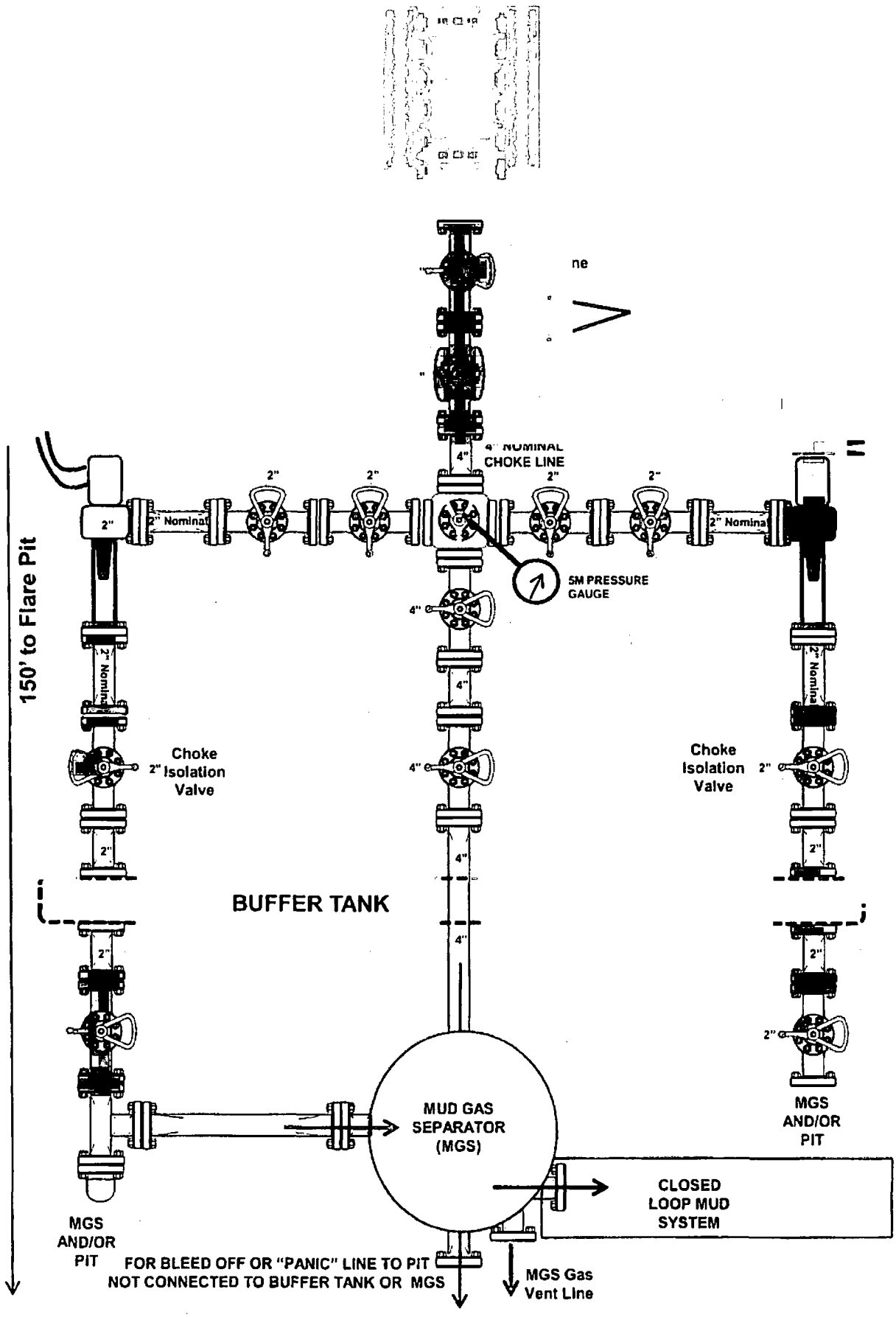
COG_Eider_102H_Drill_Prog_20171016142416.pdf

Other Variance attachment:

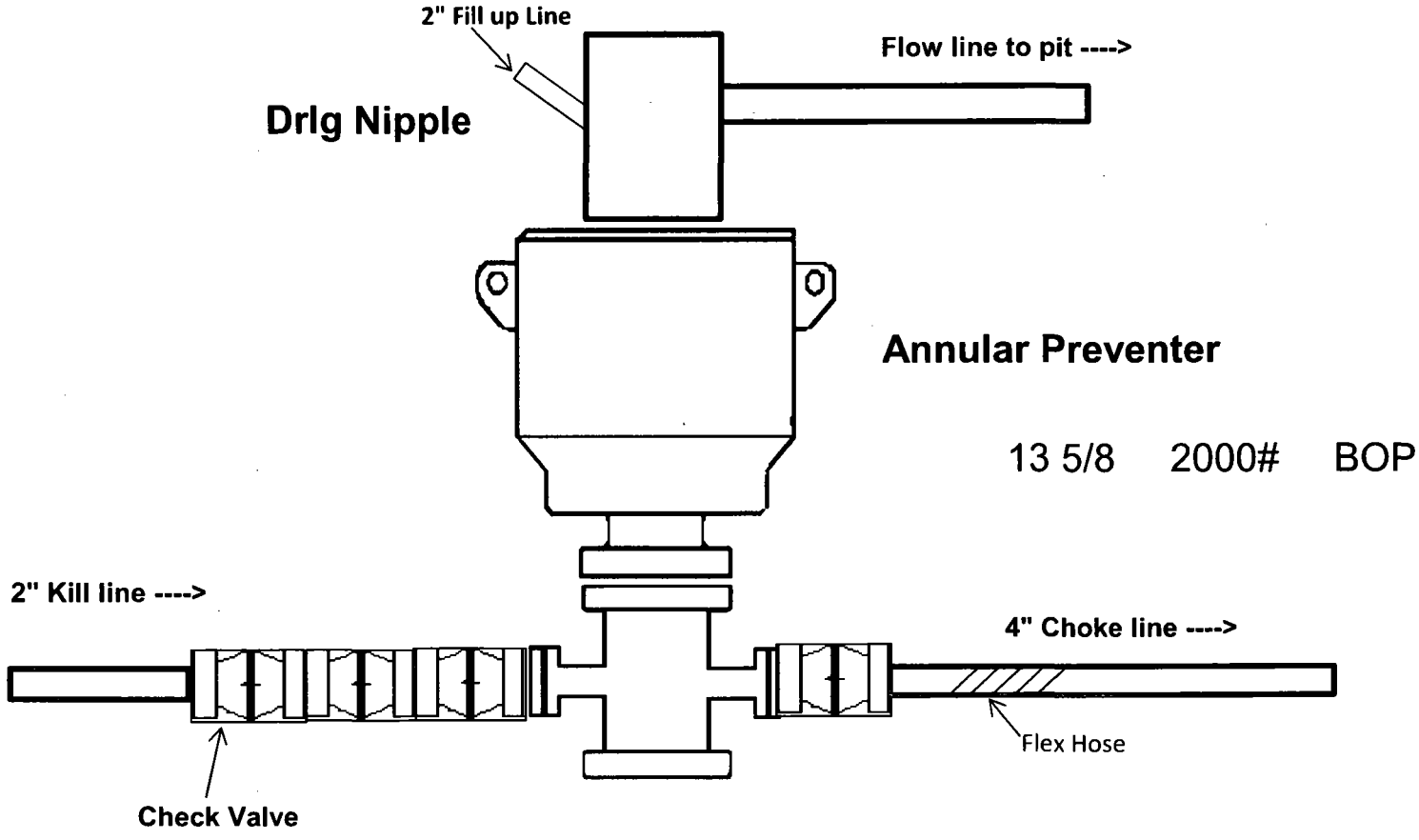
CLOSED LOOP)


4" NOMINAL CHOKE LINE
2" Nominal
5M PRESSURE GAUGE
150' to Flare Pit
Choke 2" Isolation Valve
Choke Isolation Valve
BUFFER TANK
MUD GAS SEPARATOR (MGS)
MGS AND/OR PIT
CLOSED LOOP MUD SYSTEM
MGS AND/OR PIT
FOR BLEED OFF OR "PANIC" LINE TO PIT NOT CONNECTED TO BUFFER TANK OR MGS
MGS Gas Vent Line

M (W CLOSED LOOP)



2,000 psi BOP Schematic



TechnipFMC

TECHNIP Umbilicals Inc.
COFLEXIP® Products and Solutions

Quality Control Department

Control Report Dated 6/27/2017

COFLEXIP® Products and Solutions
FLEXIBLE PIPE TEST CERTIFICATE

Customer	OFS CANADA INC	**Line Number**	L16883
		Line Serial Number	L16883-201
		Part Number	076 60414 05 05
Application	3" X 30' 10K CHOKE / KILL LINE		

COFLEXIP® Products Division certifies that the results of the test and controls performed on the above mentioned flexible pipe is as follows:

Internal Diameter	3	**inches**
Length	30.46	**feet**
Working Pressure	10000	**psi**
Test Pressure	15000	**psi**
As per attached recorder chart Test Duration	4	**hours**

QUALITY CONTROL ABLE ZABALETA Accept TechnipFMC 4 Coflexip Products and Solutions

6-26-17

THIRD PARTY INSPECTION FIRM OR CUSTOMER REPRESENTATIVE

TU-INC. QUALITY CONTROL

Test Configuration 12 Zone

Production Information Input

Customer ID	
OFS CANADA INC	
Line S/N	Technician
L16883-201	JUAN

QC Information Input

QC Insp	Third Party
ABEL	BV
Witness?	Test Procedure
Yes	SIC 01 60
Special Instructions	

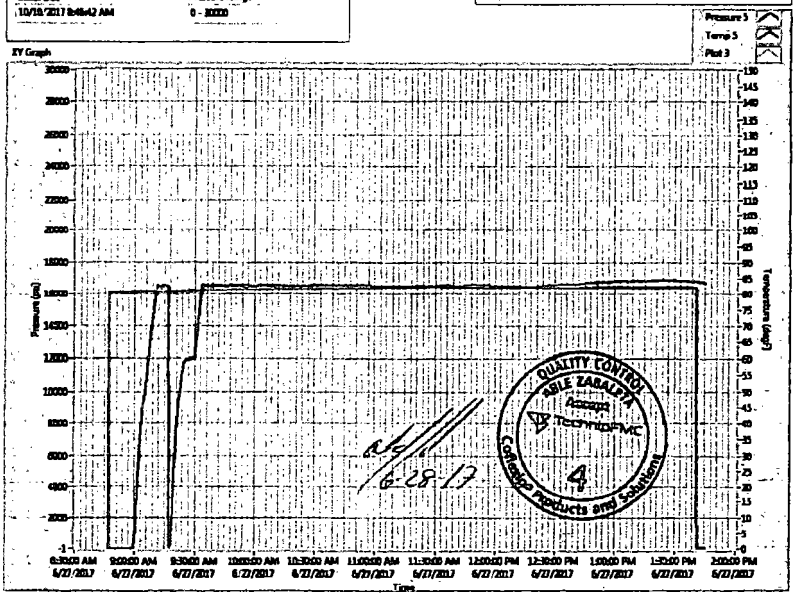
Station 05

Station Information

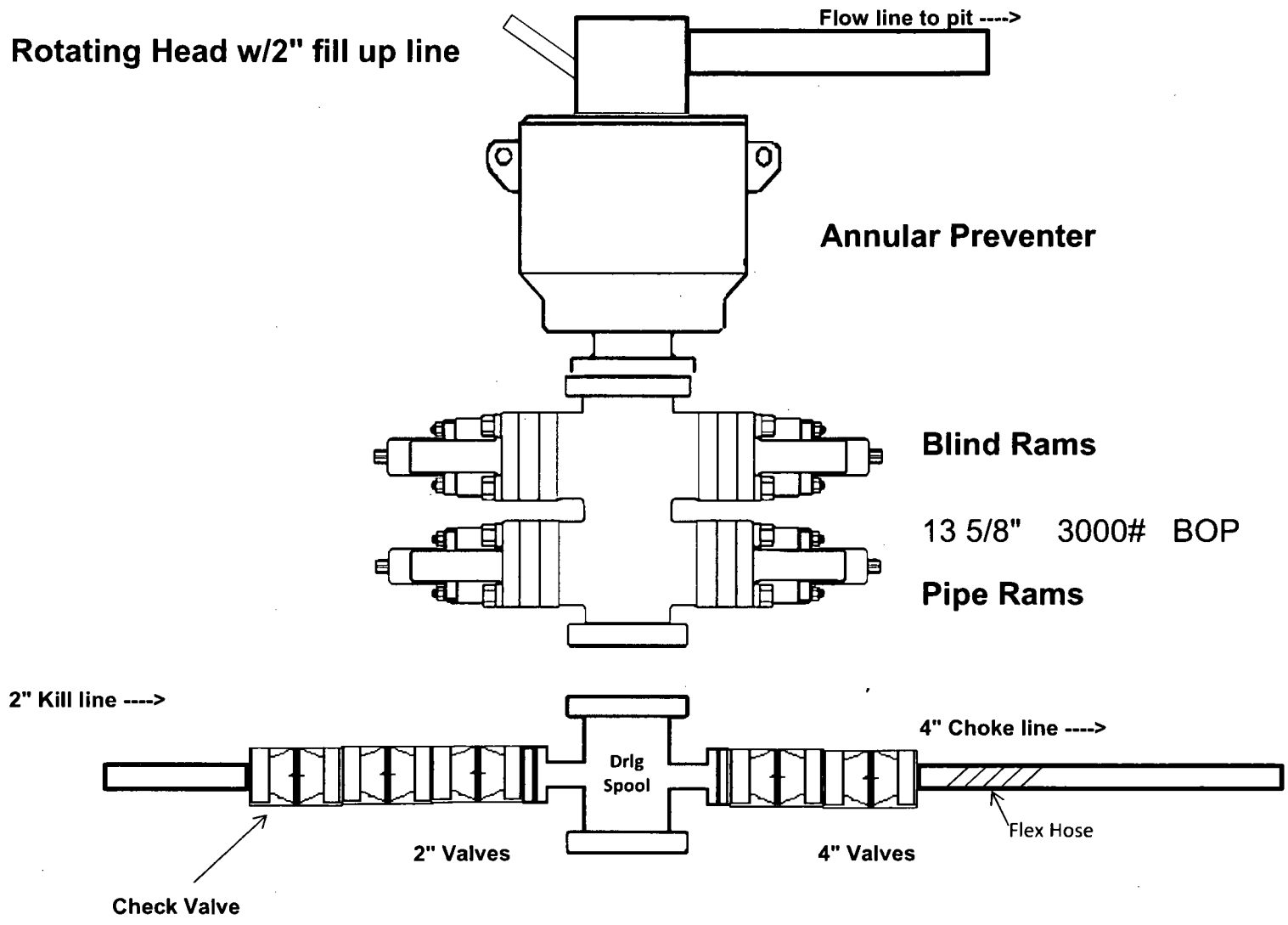
Pressure Transducer S/N	Temperature S/N
1138534	T13A
Stable Press	Test Press
18000	15000
Calib. Due	Pressure Range
10/18/2017 8:48:42 AM	0 - 30000

Calibration

Raw Minimum	Eng Minimum
0.004000	0.000000
Raw Maximum	Eng Maximum
0.820000	30000.000000



3,000 psi BOP Schematic



TechnipFMC

TECHNIP Umbilicals Inc.
COFLEXIP® Products and Solutions

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Control Report Dated 6/27/2017

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QUALITY CONTROL
ABLE ZABALETA
Accept
TechnipFMC
4
Coflexip Products and Solutions

6-26-17

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OFS CANADA INC	
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L16883-201	JUAN

QC Information Input

QC Insp	Third Party
ABEL	BV
Witness?	Test Procedure
Yes	SIC 01 60
Special Instructions	

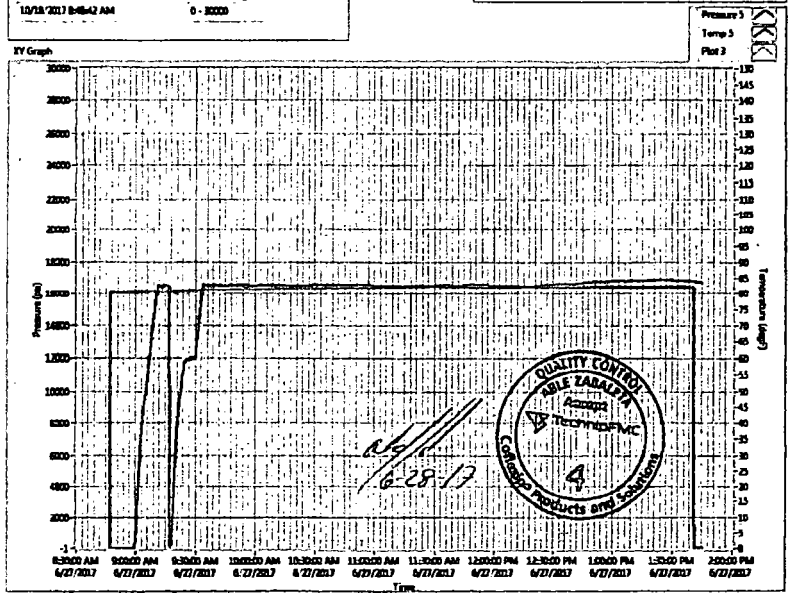
Station 05

Station Information

Pressure Transducer S/N	Temperature S/N
1178534	T13A
Stable Press	Test Press
16900	15000
Calib. Due	Pressure Range
10/18/2017 8:48:42 AM	0 - 30000

Calibration

Raw Minimum	Eng Minimum
0.004000	0.000000
Raw Maximum	Eng Maximum
0.020000	30000.000000



Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	960	13.375"	54.5	J55	STC	2.57	1.35	9.82
12.25"	0	4000	9.625"	40	J55	LTC	1.22	1.12	3.25
12.25"	4000	4625	9.625"	40	L80	LTC	1.27	1.62	5.73
8.75"	0	16,480	5.5"	17	P110	LTC	1.68	3.01	2.84
			BLM Minimum Safety Factor				1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing.to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Casing Program

Hole Size	Casing From	Casing To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17.5"	0	960	13.375"	54.5	J55	STC	2.57	1.35	9.82
12.25"	0	4000	9.625"	40	J55	LTC	1.22	1.12	3.25
12.25"	4000	4625	9.625"	40	L80	LTC	1.27	1.62	5.73
8.75"	0	16,480	5.5"	17	P110	LTC	1.68	3.01	2.84
			BLM Minimum Safety Factor				1.125	1	1.6 Dry 1.8 Wet

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Casing Program

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17.5"	0	960	13.375"	54.5	J55	STC	2.57	1.35	9.82
12.25"	0	4000	9.625"	40	J55	LTC	1.22	1.12	3.25
12.25"	4000	4625	9.625"	40	L80	LTC	1.27	1.62	5.73
8.75"	0	16,480	5.5"	17	P110	LTC	1.68	3.01	2.84
			BLM Minimum Safety Factor				1.125	1	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing.to mitigate collapse. Intermediate burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

COG Production, LLC - Eider Federal #102H

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	390	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl2
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl2
Inter.	870	12.7	2.0	9.6	16	Lead: 35:65:6 C Blend
	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl
5.5 Prod	640	11.9	2.5	19	72	Lead: 50:50:10 H Blend
	1970	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results
Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1st Intermediate	0'	50%
Production	4,125'	25% OH in Lateral (KOP to EOL) – 40% OH in Vertical

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	x	Tested to:
12-1/4"	13-5/8"	2M	Annular	x	2000 psi
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram	x	3M
			Pipe Ram	x	
			Double Ram		
			Other*		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N Are anchors required by manufacturer?
N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C
Surf csg	9-5/8" Int shoe	Saturated Brine	10 - 10.1	28-34	N/C
9-5/8" Int shoe	Lateral TD	Cut Brine	8.6 - 9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Y	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
Y	No Logs are planned based on well control or offset log information.
N	Drill stem test? If yes, explain.
N	Coring? If yes, explain.

Additional logs planned		Interval
N	Resistivity	Pilot Hole TD to ICP
N	Density	Pilot Hole TD to ICP
Y	CBL	Production casing (If cement not circulated to surface)
Y	Mud log	Intermediate shoe to TD
N	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4465 psi at 9228' TVD
Abnormal Temperature	NO 150 Deg. F.

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other Facets of Operation

Y	Is it a walking operation?
N	Is casing pre-set?

x	H2S Plan.
x	BOP & Choke Schematics.
x	Directional Plan

APD ID: 10400023408 **Submission Date:** 10/17/2017

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Well Type: OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes
Show Final Text

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

COG_Eider_102H_Existing_Road_20171016142432.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** YES

ROW ID(s)

ID: NM132549

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

COG_Eider_102H_Maps_Plats_20171016142452.pdf

New road type: RESOURCE

Length: 4954.4 Feet **Width (ft.):** 30

Max slope (%): 33 **Max grade (%):** 1

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Water will be diverted where necessary to avoid ponding, prevent erosion, maintain food drainage, and to be consistent with local drainage patterns.

New road access plan or profile prepared? NO

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: Blading

Access other construction information: No turnouts are planned. Re-routing access road around proposed well location.

Access miscellaneous information:

Number of access turnouts: **Access turnout map:**

Drainage Control

New road drainage crossing: CULVERT,OTHER

Drainage Control comments: None necessary.

Road Drainage Control Structures (DCS) description: None needed.

Road Drainage Control Structures (DCS) attachment:

Access Additional Attachments

Additional Attachment(s):

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

COG_Eider_102H_1_Mile_Maps_20171016142506.pdf

Existing Wells description:

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: Production will be sent to the proposed Eider CTB 1, A surface flow line of approximately 920.6' of 3" steel pipe carrying oil, gas and water under a maximum pressure of 125 psi will follow the road to the facility at the Eider CTB 1 location. We plan to install a 4" surface polyethylene pipe transporting Gas Lift Gas from the Eider CTB 1 to the Eider Federal 102H. The surface Gas Lift Gas pipe of approximately 920.6' under a maximum pressure of 125 psi will be installed no farther than 10 feet from the edge of the road.

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: ICE PAD CONSTRUCTION & MAINTENANCE, STIMULATION, SURFACE CASING
Water source type: OTHER
Describe type: Fresh Water
Source latitude:
Source longitude:
Source datum:
Water source permit type: PRIVATE CONTRACT,PRIVATE CONTRACT
Source land ownership: PRIVATE
Water source transport method: PIPELINE,PIPELINE
Source transportation land ownership: PRIVATE
Water source volume (barrels): 337500
Source volume (acre-feet): 43.50142
Source volume (gal): 14175000

Water source use type: INTERMEDIATE/PRODUCTION CASING
Water source type: OTHER
Describe type: Brine Water
Source latitude:
Source longitude:
Source datum:
Water source permit type: PRIVATE CONTRACT,PRIVATE CONTRACT
Source land ownership: COMMERCIAL
Water source transport method: TRUCKING,TRUCKING
Source transportation land ownership: COMMERCIAL
Water source volume (barrels): 22500
Source volume (acre-feet): 2.9000947
Source volume (gal): 945000

Water source and transportation map:

COG_Eider_102H_Brine_H2O_20171016142637.pdf
COG_Eider_102H_Fresh_H2O_20171016142649.pdf

Water source comments: The fresh water will be obtained from Mark McCloy water well located in Section 33, T24S, R33E, or from Rock House Ranch (575) 885-4195, Brine water will be purchased from Mesquite Services (575) 887-4847. No water well will be drilled on the location.
New water well? NO

New Water Well Info

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from Mack Chase caliche pit located in Section 20, T24S, R33E. (575) 748-1288.

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: SEWAGE

Waste content description: Human waste and gray water.

Amount of waste: 1000 gallons

Waste disposal frequency : One Time Only

Safe containment description: Waste will be properly contained and disposed of properly at a state approved disposal facility.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Trucked to an approved disposal facility.

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Waste type: DRILLING

Waste content description: Drilling fluids and produced oil land water while drilling and completion operations.

Amount of waste: 6000 barrels

Waste disposal frequency : One Time Only

Safe containment description: All drilling waste will be stored safely and disposed of properly.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility.

Waste type: GARBAGE

Waste content description: Garbage and trash produced during drilling and completion operations.

Amount of waste: 500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility.

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL

Disposal type description:

Disposal location description: Trucked to an approved disposal facility.

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? YES

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Description of cuttings location Roll off cutting containers on tracks.

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: YES

Ancillary Facilities attachment:

COG_Eider_102H_GCP_20171016142710.pdf

Comments: GCP Attached.

Section 9 - Well Site Layout

Well Site Layout Diagram:

COG_Eider_102H_Prod_Facility_20171016142729.pdf
COG_Eider_CTB_1_20171016142738.pdf
COG_Eider_102H_CTB_Flowlines_20171016142752.pdf

Comments: Production will be sent to the proposed Eider CTB 1, A surface flow line of approximately 920.6' of 3" steel pipe carrying oil, gas and water under a maximum pressure of 125 psi will follow the road to the facility at the Eider CTB 1 location. We plan to install a 4" surface polyethylene pipe transporting Gas Lift Gas from the Eider CTB 1 to the Eider Federal 102H. The surface Gas Lift Gas pipe of approximately 920.6' under a maximum pressure of 125 psi will be installed no farther than 10 feet from the edge of the road.

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** EIDER FEDERAL

Multiple Well Pad Number: 101H, 201H, 102H, 301H, 302H, 202H

Recontouring attachment:

Drainage/Erosion control construction: If needed, immediately following pad construction approximately 400' of straw waddles will be placed on the west side of the location, 200' of straw waddles will be placed on the northwest side of the location, and 200' of straw waddles will be placed on the southwest side of the location to reduce sediment impacts to fragile/sensitive soils.

Drainage/Erosion control reclamation: N/A

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Well pad proposed disturbance (acres):

Road proposed disturbance (acres):

Powerline proposed disturbance (acres):

Pipeline proposed disturbance (acres):

Other proposed disturbance (acres):

Total proposed disturbance:

Well pad interim reclamation (acres): 4.54

Road interim reclamation (acres): 1.59

Powerline interim reclamation (acres):

Pipeline interim reclamation (acres): 19.456022

Other interim reclamation (acres): 0

Total interim reclamation: 25.586023

Well pad long term disturbance (acres): 3.21

Road long term disturbance (acres): 1.59

Powerline long term disturbance (acres):

Pipeline long term disturbance (acres): 19.456022

Other long term disturbance (acres): 0

Total long term disturbance: 24.256021

Reconstruction method: Portions of the pad not needed for production operationswill be re-contoured to its original state as much as possible. The caliche that is removed will be reused. The stockpiled topsoil will be spread out over reclaimed area and reseeded with BLM approved seed mixture

Topsoil redistribution: North 80'. Northwest 60'

Soil treatment: None

Existing Vegetation at the well pad: Shinnery Oak/Mesquite grassland.

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Shinnery Oak/Mesquite grassland.

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: Shinnery Oak/Mesquite grassland.

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: N/A

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Total pounds/Acre:

Seed Summary	
Seed Type	**Pounds/Acre**

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Rand **Last Name:** French

Phone: (432)254-5556 **Email:** rfrench@concho.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: N/A

Weed treatment plan attachment:

Monitoring plan description: N/A

Monitoring plan attachment:

Success standards: N/A

Pit closure description: N/A

Pit closure attachment:

COG_Eider_102H_Closed_Loop_20171016142815.pdf

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: COG respectfully requests approval to build a 1000' x 1000' Gadwall 35 Federal Frac Pond 2 to serve this well and any other well within a two mile radius. The proposed frac pond is to be located in Section 35, T24S, R32E. Plats are attached.

Use a previously conducted onsite? YES

Previous Onsite information: Onsite conpleted on 8/22/2017 by Rand French (COG); Gerald Herrera (COG); and Jeff Robertson (BLM).

Other SUPO Attachment

Operator Name: COG PRODUCTION LLC

Well Name: EIDER FEDERAL **Well Number:** 102H

COG_Eider_102H_Certification_20171016142836.pdf

COG_Gadwall_Frac_Pond_2_20171017064959.pdf

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

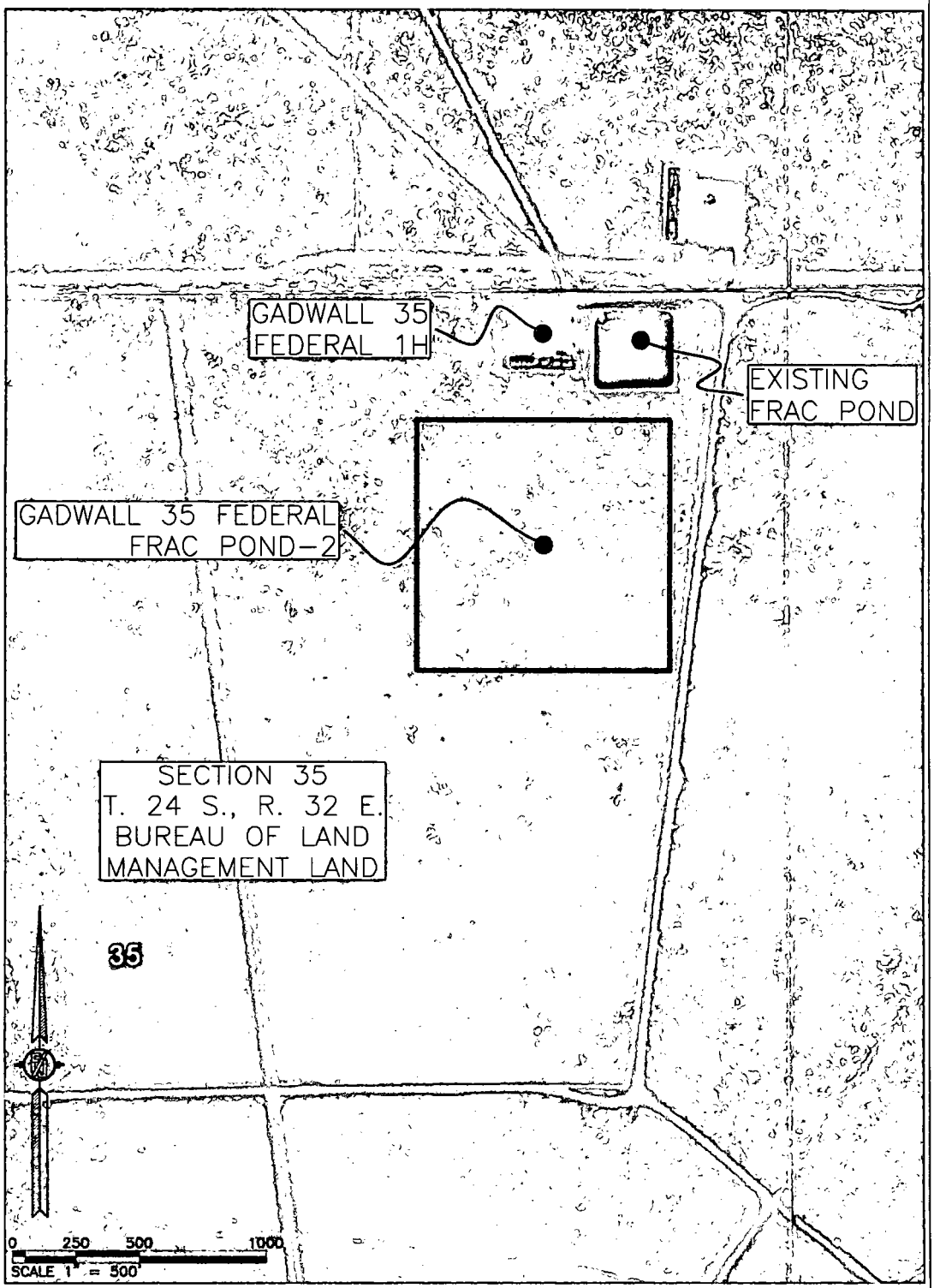
CADWALL 35 FEDERAL FRAC POND-2

COG OPERATING, LLC

IN THE N/2 NE/4 & SE/4 NE/4 OF
SECTION 35, TOWNSHIP 24 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

OCTOBER 16, 2017

AERIAL PHOTO



SHEET: 3-3 SURVEY NO. 5058B

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Bond Info Data Report

03/26/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB000860

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: